1. (Thrice Amended) A method for labeling genetic material, the method comprising:

a) disrupting cells so as to liberate genetic material contained in the cells;

b) contacting the genetic material to a column in a manner to cause the genetic material to become immobilized to the column;

c) fragmenting and labeling the immobilized genetic material within the column at the same time via a radical-mediated process; and

d) eluting the labeled material from the column, wherein the method occurs within 20 minutes.

2. (Thrice Amended) A method for labeling genetic material, the method comprising:

a) disrupting cells so as to liberate genetic material contained in the cells;

b) contacting the genetic material to a column in a manner to cause the genetic material to become immobilized to the column;

c) fragmenting and labeling the immobilized genetic material at the same time via a radical-mediated procedure; and

d) eluting the labeled material from the column wherein the step of labeling the genetic material further comprises maintaining the column at a temperature of between 45 °C and 100 °C.

5. (Thrice Amended) A method for labeling genetic material, the method comprising:

a) disrupting cells so as to liberate genetic material contained in the

cells;

b) contacting the genetic material to a column in a manner to cause the genetic material to become immobilized to the column;

c) fragmenting and labeling the immobilized genetic material at the same time; and

d) eluting the labeled material from the column wherein the step of labeling the genetic material comprises:

e) contacting double-stranded nucleic acid molecules of the genetic material with radical-generating complexes for a time and at concentrations sufficient to produce free-aldehyde moieties;

f) reacting the aldehyde moieties with amine to produce a condensation product; and

g) contacting the condensation product with a chromophore.

9. (Thrice Amended) A two-buffer process for labeling genetic material, the process comprising:

a) contacting cells containing the genetic material to a silica column;

b) creating a first fraction of cell detritus and a second fraction containing the genetic material;

c) confining the genetic material to the column;

d) removing the cell detritus;

e) subjecting the genetic material to radicals so as to produce reactive aldehyde groups on the genetic material; and

f) attaching chromophore to the genetic material wherein the genetic material is contacted with radical in aerobic conditions wherein the steps of attaching chromophore occurs at the same time that the reactive aldehyde groups are produced.

10. (Thrice Amended) A two-buffer process for isolation of genetic material, followed by labeling of the genetic material, the process comprising:

a) contacting cells containing the genetic material to a silica column;

b) creating a first fraction of cell detritus and a second fraction containing the genetic material;

c) confining the genetic material to the column;

d) removing the cell detritus;

e) subjecting the genetic material to radicals so as to produce reactive aldehyde groups on the genetic material; and

f) attaching chromophore to the genetic material wherein the genetic mate rial is contacted with radical in anaerobic conditions, wherein the steps of attaching chromophore occurs at the same time that the reactive aldehyde groups are produced.

13. (Thrice Amended) A two-buffer process for isolation of genetic material, followed by labeling of the genetic material, the process comprising:

a) contacting cells containing the genetic material to a silica column;

b) creating a first fraction of cell detritus and a second fraction containing the genetic material;

c) confining the genetic material to the column;

d) removing the cell detritus;

e) subjecting the genetic material to radicals so as to produce reactive aldehyde groups on the genetic material; and

f) attaching chromophore to the genetic material wherein the two buffers comprise a first buffer to lyse the cells and a second buffer to attach the genetic material to the column, wherein the steps of attaching chromophore occurs at the same time that the reactive aldehyde groups are produced.

26. (Amended) A process for fragmenting and labeling DNA and RNA contained in a lysate, the process comprising:

a) contacting the lysate with a first column packed with material so as to confine the DNA to the first column and allow the RNA to pass through the first column;

b) contacting the passed through RNA to a second column packed with material so as to confine the RNA to the second column;

c) subjecting the confined DNA and confined RNA to radicals so as to produce reactive aldehyde groups on the DNA and RNA;

d) attaching chromophore to the DNA and RNA wherein the steps of attaching chromophore occurs at the same time that the reactive aldehyde groups are produced; and

e) eluting the DNA from the first column and the RNA from the second column, wherein a first buffer is utilized to lyse cells containing the DNA and RNA and also to attach the DNA to the first column and a second buffer is used to attach RNA to the second column.